Course Code	HP3204
Course Title	An Ape's Guide to Human Language
Pre-requisites	HP1000 Introduction to Psychology HP1100 Fundamentals of Social Science Research
No of AUs	3

Course Aims

This course is an introduction to psycholinguistics, through the frame of comparative psychology: How does the human mind process language? What are the innate skills *we share* with other animals that contribute to our language skills? What are *the differences* between humans and other animals that contribute to the human language faculty, and how language systems work. The course will cover fundamentals of language acquisition and language processing, from lexical access, context effects and priming, to embodied theories of language, neurobiology of language, and language disorder. The course uses comparative physiology, animal behaviour, and neuroscience, as way of framing the question 'What makes us human?'

Intended Learning Outcomes (ILO)

By the end of this course, you (as a student) would be able to:

1. describe anatomical and behavioural differences between humans and other primates, and discuss how they relate to human language
2. analyse, discuss and write critically about human language processing
3. demonstrate a working knowledge of psycholinguistics, including recall of key methods and understanding of findings that may impact research in other areas of psychology
4. communicate complex scientific concepts for a lay audience, with high scientific accuracy, in an engaging manner

Course Content

The course is organized along the following topics:

1	The curious case of the talking ape
2	A *Users' Guide* to the human vocal tract: How to flap your meat
3	Tuning the Ears
4	Learning from experience

5	Making faces
6	These hips are made for walking
7	Grandma, what big *brains* you have!
8	Inside the wrinkled walnut: Words
9	Inside the wrinkled walnut: The Lexicon
10	Inside the wrinkled walnut: Syntax
11	90% Right, all of the time
12	Field trip: Singapore Zoo
13	Sign language, writing, and other linguistic innovations

Assessment (includes both continuous and summative assessment)

Component	Course LO Tested	Related Programme LO or Graduate Attributes	Weighting	Team/Individual	Assessment Rubrics
1. Final Examination	1,2,3	Competence, Critical Thinking, Written Communication	40	Individual	
2.CA1: Public **Science** Project	1,4	Competence, Communication, Creativity, Teamwork	40	Team	
3. CA2: Tutorial Participation incl. regular quizzes	1,2,3	Competence, Critical Thinking, Communication	20	Individual	
Total			100%		

Formative feedback

Students will receive feedback on their recall of key material through quizzes, and on their ability to describe anatomical differences and key methods and finding in psycholinguistics during in-class oral activities. Students will also receive feedback on their understanding of key comparative differences in the feedback on their Public Science project. The end of Semester exam will provide summative feedback of students' ability, to recall and describe key findings with accuracy.

Learning and Teaching approach

Approach	How does this approach support students in achieving the learning outcomes?

Lectures	Lectures will effectively present and clarify evidence about human language processing, contextualized through the frame of comparative physiology and psychology (L0l,2,3)
Field trips	This course will involve two field trips, to engage students in the comparative aspects of the course. The first will be a visit to a Natural History museum (alternatively, a Science museum)-which will be used as a model for designing a public science exhibit. The second field trip will be a visit to observe chimpanzee behaviour during feeding/enrichment activities, with a specific focus on the handedness of chimp behaviours and their communications. The field trip to a science Museum/Natural History Museum will help students develop their science engagement skills (L04), and a field trip to the Singapore Zoo will allow students the opportunity to critically evaluate behavioural differences between humans and primates, first hand (L0l).
Interactive classroom activities	Various activities (case studies, team-based learning, think-pair-share, etc.) to help students revise their understanding of difficult material (L0l,3), practice describing properties of the human language processing system, and the evidence these models are based on (L02) and share their Public Science 'campaign' with entire class (L04).

Reading and References

No textbook currently exists covering the breadth and depth of content in the course. Reading will be allocated from variety of sources, including selected sections from the following textbooks, along with journal articles including those in the list below. The reading list will be adapted each time the course is taught to update it to the latest developments in the field.

Textbooks (Selected Excerpts):
Witney, P. (1998). *The Psychology of Language.* Boston, MA: Houghton-Mifflin.
Harley, T. A. (2008). *The Psychology of Language: From data to theory.* New York, NY: Psychology Press.
Christiansen M. **H.** & Kirby, S. (2003) *Language Evolution,* Oxford, UK, Oxford University Press

Journal Articles:
See Appendix 1 for detailed list

Course Policies and Student Responsibilities

(1) General

Students are expected to complete all assigned pre-class readings and activities, attend all seminar classes punctually and take all scheduled assignments and tests by due dates. Students

are expected to take responsibility to follow up with course notes, assignments and course related announcements for seminar sessions they have missed. Students are expected to participate in all seminar discussions and activities. Previous research has shown that students show better retention of information when they take notes by hand, and do not have screen-based devices available during lectures. Therefore, **lectures will be screen free:** which means no laptops or phones. Lecture materials will be made available AFTER the lecture. Students are encouraged to take notes by hand. By contrast, Tutorial session will typically involve the use of screen-based devices, so students are encouraged to bring laptops/tablets etc.

(2) Absenteeism

This class has Team-based activities contributing to a portion of your course grade. Absence from class without a valid reason will affect your overall course grade. Valid reasons include falling sick supported by a medical certificate and participation in NTU's approved activities supported by an excuse letter from the relevant bodies. There will be no make-up opportunities for in-class activities.

If you miss a seminar session, you must inform your team members and me via email (include email address} prior to the start of the class. Students who miss T-RATs and team in-classactivity with valid reasons will earn the team score. Students who miss I-RAT or T-RAT without a valid reason will earn nothing for that session of absence.

(3) Online Compulsory Assignments

You are required to submit online compulsory assignments on due dates.

Academic Integrity

Good academic work depends on honesty and ethical behaviour. The quality of your work as a student relies on adhering to the principles of academic integrity and to the NTU Honour Code, a set of values shared by the whole university community. Truth, Trust and Justice are at the core of NTU's shared values.

As a student, it is important that you recognize your responsibilities in understanding and applying the principles of academic integrity in all the work you do at NTU. Not knowing what is involved in maintaining academic integrity does not excuse academic dishonesty. You need to actively equip yourself with strategies to avoid all form s of academic dishonesty, including plagiarism, academic fraud, collusion and cheating. If you are uncertain of the definitions of any of these t erms, you should go to the academic integrity website for more information. Consult your instructor(s} if you need any clarification about the requirements of academic int egrity in the course.

Planned Weekly Schedule			
Week	**Topic**	**Course LO**	**Readings/ Activities**
1	The curious case of the talking ape Ll. What is communication? L2. How does human language differ?	**112,3,4**	Audio Overview: (Aitchison, 1996a) Reading: (Tomasello, 2003) (Witney, 1998, Ch. 1)
2	A *Users' Guide* to the human vocal tract: How to flap your meat Ll. Deforming the tube L2. Articulation Salad (variance)	**1,2,3,4**	Exercises on speech perception and production using: *PRAAT* (Boersma & Weenink, 2013) and *SpectrumView Plus* (Oxford Wave Research, 2016)
3	Tuning the Ears Ll. Does a Cat Per? L2. Does a baboon babble? (Rogers, Mi:itti:inen, Boyles, & Watkins, 2014) (Takahashi et al., 2015)	1,2,3,4	Reading: (Hauser & Fitch, 2003) (Witney, 1998, Ch. 5)
4	Learning from experience Ll. Innateness L2. A chunking monkey Content includes: (Wasserman, Brooks, & McMurray, 2015) (Bosseler, Teinonen, & Huotilainen, 2016) (Saffran, Aslin, & Newport, 1996)	**1,2,3,4**	Reading: (Hauser & Fitch, 2003)
5	Making faces (Short-Snout; Bright Eyes) Ll. Short Snout L2. Bright Eyes Content includes: (Ohala, 1994) (Hirotani, Stets, Striano, & Friederici, 2009; Hoehl, Wahl, & Pauen, 2014; Kobayashi & Kohshima, 2001; Mayhew & Gomez, 2015; Moore, Mueller, Kaminski, & Tomasello, 2015; Tomasello, Hare, Lehmann, & Call, 2007)	**1,2,3,4**	Reading: (Tomasello, et al., 2007)
6	These hips are made for walking	**1,2,3,4**	Reading:

	Ll. Walking and talking L2. The Obstetric Dilemma (or not)		(Dunsworth & Eccleston, 2015) Activity: Visit to Science museum
7	Grandma, what big *brains* you have! Ll. The longest childhood L2. The hungriest brain (Dunsworth, 2016; Piantadosi & Kidd, 2016)	**1,2,3,4**	Reading: (Herculano-Houzel, 2016, Ch 10-11) (alternative week for Science museum visit)
8	Inside the wrinkled walnut: Words Ll. What do words do? L2. Learning & recognizing spoken words	1,2,3	Audio Overview: (Aitchison, 1996b) Reading: (Witney, 1998, Ch. 5) (Harley, 2008, Ch. 11)
9	Inside the wrinkled walnut: The Lexicon Ll. Lexical Access L2. Context effects	1,2,3	Reading: (Harley, 2008, Ch. 6) (Witney, 1998, Ch. 6)
10	Inside the wrinkled walnut: Syntax Ll. Phrase structure L2. Acquisition and Innateness (or not)	1,2,3	Reading: (Tomasello, 2003) (Harley, 2008, Ch. 10)
11	90% Right, all of the time Ll. Handedness and Paw-ed-ness L2. Language lateralization (or not) (Frayera et al., 2016)	**1,2,3,4**	Reading: (Tremblay & Dick, 2016)
12	Field trip week (3hrs at *Zoo*= lecture+ tutorial time allocation)		Activity: Visit to Singapore zoo for Chimpanzee feeding/enrichment
13	Sign language, writing, and other linguistic **innovations** (Perniss & Vigliocco, 2014)	**1,2,3,4**	Activity: General Revision (Alternative week for zoo **visit, in case of** scheduling conflict)

Journal Articles:

Aitchison, J. (1996a). 'A Web of Deceit' Lecture 2 of 'The Language Web' [Audio Podcast: 28 mins]. *BBC Reith Lectures:* BBC Radio 4.

Aitchison, J. {1996b). 'The World Wide Web' Lecture 4 of 'The Language Web' [Audio Podcast: 28 mins]. *BBC Reith Lectures:* BBC Radio 4.

Boersma, P., & Weenink, D. (2013). *Praat: doing phonetics by computer.*

Bosseler, A. N., Teinonen, T., & Huotilainen, M. (2016). Infant Directed Speech Enhances Statistical Learning in Newborn Infants: An ERP Study. *PLoS ONE,* 11(9), e0162177.

Dunsworth, H. M. (2016). Thank your intelligent mother for your big brain. *PNAS,* 113(25), 6816-6817.

Dunsworth, **H.** M., & Eccleston, L. {2015). The evolution of difficult childbirth and helpless hominin infants. *Annual Review of Anthropology, 44,* 55-69.

Frayera, D. W., Clarkeb, R. J., Fiorec, I., Blumenschined, R. J., Perez-Pereze, A., Martineze, L. M., ... Bondiolic, L. (2016). OH-65: The earliest evidence for right-handedness in the fossil record. *Journal of Human Evolution, 100,* 65-72.

Harley, T. A. (2008). *The Psychology of Language: From data to theory.* New York, NY: Psychology Press.

Hauser, M. D., & Fitch, W. T. (2003). What are the uniquely human components of the language faculty. In M. H. Christiansen & S. Kirby (Eds.), *Language Evolution* (pp. 158-181). Oxford, UK: Oxford University Press.

Herculano-Houzel, S. (2016). *The Human Advantage.* Cambridge MA: MIT Press.

Hirotani, M., Stets, M., Striano, T., & Friederici, A. D. (2009). Joint attention helps infants learn new words: event-related potential evidence. *NeuroReport, 20,* 600-605.

Hoehl, S., Wahl, S., & Pauen, S. (2014). Disentangling the Effects of an Adult Model's Eye Gaze and Head Orientation on Young Infants' Processing of a Previously Attended Object. *Infancy,* 19(1), 53-64.

Kobayashi, H., & Kohshima, S. (2001). Unique morphology of the human eye and its adaptive meaning: comparative studies on external morphology of the primate eye. *Journal of Human Evolution, 40,* 419-435.

Mayhew, J. A., & Gomez, J. C. (2015). Gorillas with white sclera: a naturally occurring variation in a morphological trait linked to social cognitive functions. *American Journal of Primatology,* 77(8), 869-877.

Moore, R., Mueller, B., Kaminski, J., & Tomasello, M. (2015). Two-year-old children but not domestic dogs understand communicative intentions without language, gestures, or gaze. *Developmental Science,* 18(2), 323-242.

Ohala, J. J. (1994). The frequency code underlies the sound-symbolic use of voice pitch. In L. Hinton, J. Nichols & J. J. Ohala (Eds.), *Sound Symbolism* (pp. 325-347): Cambridge University Press.

Oxford Wave Research, L. (2016). SpectrumView Plus (Version 2.0.1).

Perniss, P., & Vigliocco, G. (2014). The bridge of iconicity: from a world of experience to the experience of language. *Philosophical transactions of the Royal Society of London. Series B, Biological sciences,* 369(20130300). doi: dx.doi.org/10.1098/rstb.2013.0300

Piantadosi, S. T., & Kidd, C. (2016). Extraordinary intelligence and the care of infants. *PNAS,* 113(25), 6874-6879.

Rogers, J.C., Miittiinen, R., Boyles, R., & Watkins, K. E. (2014). Discrimination of speech and non-speech sounds following theta-burst stimulation of the motor cortex. *Frontiers in Psychology,* 5(754).

Saffran, J. R., Aslin, R. N., & Newport, E. L. (1996). Statistical learning by 8-month old infants. *Science, 274,* 1926-1928.

Takahashi, D. Y., Fenley, A. R., Teramoto, Y., Narayanan, D. Z., Borjon, J. I., Holmes, P., & Ghazanfar, A. A. (2015). The developmental dynamics of marmoset monkey vocal production. *Science,* 394(6249), 734-738.

Tomasello, M. {2003). On the Different Origins of Symbols and Grammar. In M. H. Christiansen & S. Kirby (Eds.), *Langauge Evolution* (pp. 94-110). Oxford: Oxford University Press.

Tomasello, M., Hare, B., Lehmann, H., & Call, J. (2007). Reliance on head versus eyes in the gaze following of great apes and human infants: the cooperative eye hypothesis. *Journal of Human Evolution, 52,* 314-320.

Tremblay, P., & Dick, A. S. (2016). Broca and Wernicke are dead, or moving past the classic model of language neurobiology. *Brain & Language, 162,* 60-71.

Wasserman, E. A., Brooks, D. I., & McMurray, B. (2015). Pigeons acquire multiple categories in parallel via associative learning: A parallel to human word learning? *Cognition, 136,* 99-122.

Witney, P. (1998). *The Psychology of Language.* Boston, MA: Houghton-Miffl